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(54) Title: GROUP (VII) TRANSITION-METAL COMPLEXES WITH MULTIDENTATE AMINOPOLYCARBOXYLATE LIGANDS AND A KIT FOR PRODUCING THEM

(57) Abstract: The invention relates to novel aminocarboxylate ligands that are suitable for complexing with a radionuclide, and are useful as imaging agents for diagnostic purposes. In accordance with the present invention, a method of preparing a compound of formula (I): $\text{fac-[M(CO)}_3\text{(OH)}_2\text{)]}^+$, wherein M is Mn, $^{99\text{m}}\text{Tc}$, ^{186}Re or ^{188}Re , involves reacting a metal in permetallate form with carbon monoxide and a reducing agent, wherein a mixture of a basic borate buffer and a reducing agent soluble in water but not substantially decomposed by water is solved in a water containing solvent system containing a solution of the metal in permanganate, pertechnetate or perrhenate form in the presence of carbon monoxide. The compound of formula (I) can be reacted with a ligand L_x to form a compound of formula (II): $\text{fac-[M(CO)}_3\text{(X)}_2\text{L}_1\text{)]}^n$, wherein M is as defined above, L_x is a multidentate ligand, and n is a charge of the ligand L_x increased with one + charge. The invention also is directed to novel compounds, and kits for carrying out the disclosed methods.

WO 01/00637 A1